

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1.-37. (cancelled)

38. (new) An apparatus for treating patients suffering from vascular disease by a combination of infra-, audible- and ultrasound waves, the apparatus comprising:

- a treating head for emitting sound waves with frequencies lying within an operation range extending from a lower limit of 1 Hz to an upper limit of 100 kHz, said treating head also serving for introducing said sound waves through a coupling medium into a body portion to be treated,
- an electronics connected to said treating head for energizing said treating head to emit said sound waves, and
- a control panel connected to said electronics to choose an electronic waveform of energizing, wherein;

the sound waves emitted by said treating head constitute a treatment unit of a predetermined total length in time;

the frequencies of the sound waves within said treatment unit sweep over the operation range from said lower limit to said upper limit in given steps, said steps changing in length over time during said treatment unit; and

each sound wave of a certain frequency is emitted for a given period of time, said periods of time adding up to the total length in time of said treatment unit.

39. (new) The apparatus according to Claim 38, wherein said treating head is formed as an electromagnetic or a piezoelectric tool.

40. (new) The apparatus according to Claim 39, wherein said treating head comprises a metallic base plate having a first face and a second face opposite to said first face, as well as a contour, said first face forming a treating surface embedded into a holder, said second surface carrying several exciting means arranged apart from each other in a given geometry, said exciting means having projections on said second face of the base plate, said projections falling within the contour of the base plate.

41. (new) The apparatus according to Claim 40, wherein said holder of the treating head is made of a plastic material, said base plate is made of aluminium and said exciting means are cut away from a piezoelectric crystal with a crystal axis orientation that ensures inverse piezoelectric effect of said exciting means.

42. (new) The apparatus according to Claim 41, wherein said base plate and said exciting means are of disc shape.

43. (new) The apparatus according to Claim 42, further comprising a heating device and a thermometer for measuring the temperature of the body portion to be treated, wherein said heating device and said thermometer are connected to said electronics.

44. (new) The apparatus according to Claim 43, wherein the treating head is equipped with a thermal sensor for controlling said heating device.

45. (new) The apparatus according to Claim 44, wherein said heating device is attached to a resilient thermal blanket being capable of receiving the body portion to be treated and maintaining the temperature between 25°C and 50°C, within the thermal blanket.

46. (new) The apparatus according to Claim 45, further comprising a pulse strength meter for measuring the patient's pulse strength.

47. (new) The apparatus according to Claim 46, wherein the energy density of each sound wave of a certain frequency emitted by the treating head is at most 0.1 W/cm^2 .

48. (new) The apparatus according to Claim 38, further comprising a heating device and a thermometer for measuring the temperature of the body portion to be treated, wherein said heating device and said thermometer are connected to said electronics.

49. (new) The apparatus according to Claim 38, further comprising a pulse strength meter for measuring the patient's pulse strength.

50. (new) The apparatus according to Claim 38, wherein the coupling medium is provided in the form of a gel.

51. (new) The apparatus according to Claim 38, wherein the energy density of each sound wave of a certain frequency emitted by the treating head is at most 0.1 W/cm^2 .

52. (new) The apparatus according to Claim 38, wherein said treating head is being capable of generating, within a single treatment unit, sound waves of certain frequencies, the frequency continuously increasing within the period of 1 s to 200

s of said treatment unit from 1 Hz to 200 Hz at a rate of 1 Hz per seconds, then within the period of 200 s to 208 s of said treatment unit from 200 Hz to 1,000 Hz at a rate of 100 Hz per seconds, and finally within the period of 208 s to 307 s of said treatment unit from 1,000 Hz to 100,000 Hz at a rate of 1,000 Hz per seconds.

53. (new) The apparatus according to Claim 47, wherein said treating head is being capable of generating, within a single treatment unit, sound waves of certain frequencies, the frequency continuously increasing within the period of 1 s to 200 s of said treatment unit from 1 Hz to 200 Hz at a rate of 1 Hz per seconds, then within the period of 200 s to 208 s of said treatment unit from 200 Hz to 1,000 Hz at a rate of 100 Hz per seconds, and finally within the period of 208 s to 307 s of said treatment unit from 1,000 Hz to 100,000 Hz at a rate of 1,000 Hz per seconds.

54. (new) The apparatus according to Claim 38, further comprising a visual display unit connected to said electronics.

55. (new) A method for treating patients suffering from vascular disease by a combination of infra-, audible- and ultrasound waves, wherein said method comprises the steps of
providing an apparatus comprising:

a treating head emitting sound waves with frequencies lying within an operation range extending from a lower limit of 1 Hz to an upper limit of 100 kHz,
an electronics connected to said treating head for energizing said treating head to emit said sound waves, wherein

the sound waves emitted by said treating head constitute a treatment unit of a predetermined total length in time;

the frequencies of the sound waves within said treatment unit sweep over the operation range from said lower limit to said upper limit in given steps, said steps changing in length over time during said treatment unit; and

each sound wave of a certain frequency is emitted for a given period of time, said periods of time adding up to the total length in time of the treatment unit;

arranging a coupling medium on a patient's body portion to be treated;

bringing said treating head into contact with said coupling medium;

energizing said treating head to emit said sound waves through the coupling medium and into the body portion to be treated.

56. (new) The treating method according to Claim 55, wherein said treatment unit is chosen in such a way that the treating head emits sound waves of certain frequencies, the frequency continuously increasing from 1 Hz to 200 Hz at a rate of 1 Hz per seconds within the period of 1 s to 200 s thereof, then from 200 Hz to 1,000 Hz at a rate of 100 Hz per seconds within the period of 200 s to 208 s thereof, and finally from 1,000 Hz to 100,000 Hz at a rate of 1,000 Hz per seconds within the period of 208 s to 307 s thereof.

57. (new) The treating method according to Claim 56, wherein said treatment unit is performed more than once.

58. (new) The treating method according to Claim 55, wherein:

there is further provided a heating device connected to said electronics, said heating device being attached to a resilient thermal blanket being capable of receiving the body portion to be treated;

arranging said body portion within said thermal blanket; and

generating a controlled amount of heat within said thermal blanket by said heating device and performing thereby a simultaneous hot chamber treatment of said body portion.

59. (new) The treating method according to Claim 58, further performing said hot chamber treatment of said body portion at a preset temperature falling between 25°C and 50°C, preferably between 30°C and 45°C.

60. (new) The apparatus according to claim 45, wherein the temperature within the thermal blanket is between 30°C and 45°C.

61. (new) The apparatus according to claim 47, wherein the frequency is 0.6 W/cm².

62. (new) The apparatus according to claim 51, wherein the frequency is 0.6 W/cm².

63. (new) The treating method according to claim 59, wherein the present temperature is between 30°C and 45°C.